

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference  P04/030-do/gs	<b>FOR FURTHER ACTION</b>		see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No.  PCT/EP2005/001443	International filing date (day/month/year)  14/02/2005	(Earliest) Priority Date (day/month/year)  26/02/2004	
Applicant  MERCK PATENT GMBH			

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**SEMICARBAZIDE DERIVATIVES AS KINASE INHIBITORS**

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. \_\_\_\_\_

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2005/001443

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D213/68 C07D213/81 C07D401/12 A61K31/4409 A61P19/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BEILSTEIN Data, CHEM ABS Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01/38324 A (SMITHKLINE BEECHAM P.L.C; DEAN, DAVID, KENNETH; LOVELL, PETER, JOHN; T) 31 May 2001 (2001-05-31) claim 1	1-33
X	PATENT ABSTRACTS OF JAPAN vol. 015, no. 214 (P-1209), 31 May 1991 (1991-05-31) - & JP 03 059652 A (KONICA CORP), 14 March 1991 (1991-03-14) abstract; compounds H-23	1
X	EP 0 497 265 A (KONICA CORPORATION) 5 August 1992 (1992-08-05) claim 1; compound 8	1
	----- -/-- -----	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \* & \* document member of the same patent family

Date of the actual completion of the international search

20 May 2005

Date of mailing of the international search report

01.08.2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
Fax: (+31-70) 340-3016

Authorized officer

Seelmann, I

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2005/001443

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 11, 28 November 1997 (1997-11-28) -& JP 09 185155 A (FUJI PHOTO FILM CO LTD), 15 July 1997 (1997-07-15) abstract; compounds 7,9,11,12,28 -----	1
X	PATENT ABSTRACTS OF JAPAN vol. 017, no. 007 (P-1465), 7 January 1993 (1993-01-07) -& JP 04 238347 A (KONICA CORP), 26 August 1992 (1992-08-26) abstract; compounds 9,14,21 -----	1
X	US 5 817 449 A (NAKAMURA ET AL) 6 October 1998 (1998-10-06) compounds 22,26,I-2,I-17,I-29,I-31 -----	1
X	DE 29 44 783 A1 (MITSUI TOATSU CHEMICALS,INC; MITSUI TOATSU CHEMICALS, INC., TOKIO/TOKY) 22 May 1980 (1980-05-22) claim 1; compound 64 -----	1
X	EP 0 331 096 A (KONICA CORPORATION) 6 September 1989 (1989-09-06) claim 1; compounds 64,69,86,89,90,92,93 -----	1
X	WO 03/051276 A (ASTRAZENECA AB; CHENG, YUN-XING; LUO, XUEHONG; TOMASZEWSKI, MIROSLAW;) 26 June 2003 (2003-06-26) i.a. Ex. 3-5,claim 1 -----	1
X	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 10, 31 October 1997 (1997-10-31) -& JP 09 152701 A (FUJI PHOTO FILM CO LTD), 10 June 1997 (1997-06-10) abstract; claims 1,2; compounds D3,D5,D6,D11,D12,D13,D15,D18 -----	1
X	PHOSPHORUS, SULFUR AND SILICON AND THE RELATED ELEMENTS , 90(1-4), 111-19 CODEN: PSSLEC; ISSN: 1042-6507, 1994, XP009048018 compound 13 -----	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2005/001443

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-31

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-31

subject-matter relating to compounds of formula I and II  
---

2. claim: 32

subject-matter relating to compounds of formula III  
---

3. claim: 33

subject-matter relating to compounds of formula IV  
---

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2005/001443

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0138324	A	31-05-2001	AT 281451 T	15-11-2004
			AU 1529901 A	04-06-2001
			AU 1623601 A	04-06-2001
			BR 0015532 A	25-06-2002
			CA 2395564 A1	31-05-2001
			CN 1543346 A	03-11-2004
			CZ 20021746 A3	16-10-2002
			DE 60015594 D1	09-12-2004
			EP 1232153 A2	21-08-2002
			EP 1233769 A1	28-08-2002
			ES 2228629 T3	16-04-2005
			WO 0138324 A2	31-05-2001
			HU 0203403 A2	28-02-2003
			JP 2003514860 T	22-04-2003
			JP 2003514906 T	22-04-2003
			MX PA02005106 A	07-11-2002
			NO 20022318 A	15-05-2002
			NZ 518032 A	27-02-2004
			PL 355912 A1	31-05-2004
			TR 200201364 T2	21-10-2002
			WO 0137835 A1	31-05-2001
			ZA 200203987 A	25-11-2003
JP 03059652	A	14-03-1991	NONE	
EP 0497265	A	05-08-1992	JP 2965719 B2	18-10-1999
			JP 4253051 A	08-09-1992
			DE 69207016 D1	08-02-1996
			DE 69207016 T2	13-06-1996
			EP 0497265 A1	05-08-1992
			US 5244773 A	14-09-1993
JP 09185155	A	15-07-1997	NONE	
JP 04238347	A	26-08-1992	NONE	
US 5817449	A	06-10-1998	JP 10055051 A	24-02-1998
DE 2944783	A1	22-05-1980	JP 55064557 A	15-05-1980
			AR 230431 A1	30-04-1984
			AU 525427 B2	04-11-1982
			AU 5259279 A	15-05-1980
			BR 7907251 A	05-08-1980
			CA 1137097 A1	07-12-1982
			ES 485821 A1	01-09-1980
			FR 2440943 A1	06-06-1980
			GB 2038319 A , B	23-07-1980
			IN 151843 A1	13-08-1983
			IN 158774 A1	24-01-1987
			IN 159033 A1	14-03-1987
			IN 158775 A1	24-01-1987
			IN 158776 A1	24-01-1987
			IN 158777 A1	24-01-1987
			MX 5890 E	17-08-1984
			MX 7541 E	26-02-1988
			MX 7633 E	23-04-1990
			RO 79334 A1	25-06-1982
			RO 84391 A1	17-08-1984

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2005/001443

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 2944783	A1	RO 84317 A1	23-05-1984
		RO 84318 A1	23-05-1984
		SU 1131458 A3	23-12-1984
		SU 1338783 A3	15-09-1987
		SU 1105115 A3	23-07-1984
		SU 1271371 A3	15-11-1986
		TR 20333 A	16-02-1981
		US 4515628 A	07-05-1985
		US 4566897 A	28-01-1986
		US 4619689 A	28-10-1986
EP 0331096	A	06-09-1989	JP 2000947 A
			JP 2683796 B2
			DE 68924436 D1
			DE 68924436 T2
			EP 0331096 A2
			US 4977063 A
WO 03051276	A	26-06-2003	AU 2002359150 A1
			CA 2468978 A1
			EP 1458684 A2
			WO 03051276 A2
JP 09152701	A	10-06-1997	NONE